

THE TAXONOMIC POSITION OF *MYSMENA BULBIFERA*
(*GLENOGNATHA BULBIFERA*) BANKS, WITH SOME
OBSERVATIONS ON ITS HABITS.

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During last summer, while making a study of the grassland spiders in the vicinity of Columbus, Ohio, I had occasion to observe the habits of *Mysmena bulbifera* Banks with some care. The observations made at this time raised the question whether this species could belong to the Family *Therididae*, and whether or not it had been properly placed in the genus *Mysmena*. Subsequent study of specimens and field observations have shown that these spiders are clearly related to the *Tetragnathidae* and that they should be placed in the genus *Glenognatha* of Simon. Evidences other than those of an anatomical kind will appear from the activities mentioned below. The reasons for making this change based on structure may be briefly stated.

In the original description of the genus *Mysmena* Simon, the anterior eyes are described as being subequal, in a slightly procurved line, the middle little separated from each other, *but contiguous with the lateral* (*medii inter se angusti separati sed a lateralibus contigui*). The legs are mentioned as being *short, tarsus and metatarsus about equally long* (*Pedes breves, tarsis metatarsique circiter aequilongis*). Actually the middle eyes are close together, but are widely separated from the lateral, the legs are rather long, with the tarsus only five-eighths as long as the metatarsus. On the other hand, my specimens agree very well with Simon's description of *Glenognatha*. The venter of the male is clearly cut transversely by a deep groove though it is probably not as deep as in the type species *Gelnognatha emertoni*. The palpal organ (Fig. 1) agrees well with the Figure of the type specimen given by Banks (Proc. Acad. Nat. Sci. Phila., April, 1913, Plate XII, Fig. 22). My specimens seem to be rather closely related to Bank's *Glenognatha minuta* (Proc. Cal. Acad. Sci., Vol. I, No. 7, 1898, p. 248).

Glenognatha bulbifera is a rather small pink and silver spider sometimes marked with black. It is rather common in the meadows and waste lands around Columbus, where it builds its delicate orb web in grass or weeds in rather hot dry situations. Usually the web is placed horizontally about two inches above the ground. The strands are so delicate that it is usually entirely overlooked. Near sunset, however, on finding the proper angle, the rays of the sun will reflect from its surface and make it easy to determine that the web is about four and one-half inches in diameter. The spiral strands are very close together and clearly hold drops of viscid silk. Blades

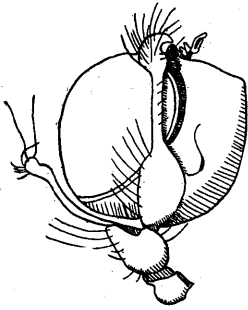


FIG. 1

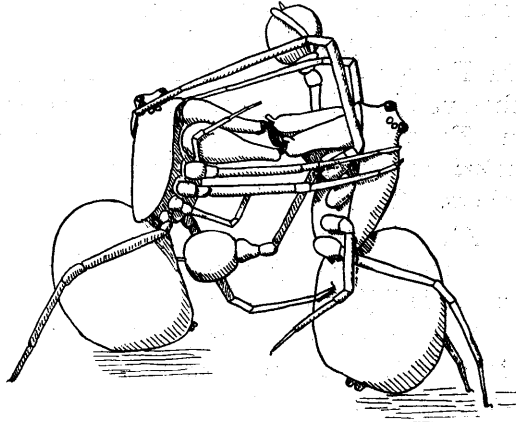


FIG. 2

of grass and other vegetation may grow up through the web apparently without causing its owner any uneasiness. The spiders, both males and females, remain on the under side of the web at its center unless disturbed when they drop to the ground and run rapidly away. If a vibrating forceps is touched to the edge of the web the spider orients and runs rapidly to the spot touched. If the forceps is withdrawn, the spider returns to the center. Mating occurs in June at the center of the web, both individuals hanging head downward. The male seeks the female and apparently can distinguish other males or females only by their reactions to his advances. I have seen two males fight for some time at the center of the web until the intruder was driven off and made to drop to the ground. When a male approaches a female, however, he is

immediately seized. The two lock mandibles and grasp each other with their legs, venter to venter. The male inserts the palpal organs alternately keeping each inserted for perhaps five minutes, (Fig. 2). The accompanying Figure was sketched from a pair which mated in a vial and consequently does not show them in the usual position upside down. This copulation occupied about fifteen minutes, during which time each bulb was inserted twice. At the end of fifteen minutes the female shook the male free, but showed no animosity toward him, either at the time or later.

The fact that these spiders build an orb web excludes them from the Family *Therididae*. Of the orb-weavers which use a viscid silk on the spiral threads there are only two families, the *Tetragnathidae* and the *Epeiridae*. The method of copulation observed in this species, corresponds closely with that observed in *Tetragnatha extensa* and *vermiformis*, and *Pachygnatha listeri* as described by Montgomery, Emerton, Menge and others. These species belong to the Family *Tetragnathidae*.

All things considered, *Mysema bulbifera* should, I believe, be placed in the *Tetragnathidae* and should be known as *Glenognatha bulbifera* (Banks).

I am very much indebted to Mr. Banks for verifying my identification of *Mysmena bulbifera*, and to Dr. F. E. Lutz, for sending me copies of the original descriptions of *Mysmena* and *Glenognatha* which were not within my reach.